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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/612,559	07/02/2003	Yasuhito Sekiya	S004-5058	4513

7590 05/09/2005

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EXAMINER

NGUYEN, LAMSON D

ART UNIT	PAPER NUMBER
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2861

DATE MAILED: 05/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/612,559

Applicant(s)

SEKIYA, YASUHIRO

Examiner

Lamson D. Nguyen

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-2 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Applicant's admitted prior art in view of Kishi (6,050,665).

Applicant's admitted prior art (AAPA) teaches an inkjet printer comprising:

Claim 1:

- an inkjet head having a wiring substrate mounted with a driving circuit including a driving IC and in which a driving voltage is applied to an electrode provided on a side wall of a groove formed in a piezoelectric ceramic plate to vary a volume in the groove to thereby discharge ink filled therein from a nozzle opening (figure 9 of the specification, prior art, teaches wiring substrate 220, driving circuit, electrodes 205 mounted on side walls 203 of groove 202, piezoelectric plate 201)

However, AAPA does not teach the following limitations:

- (claim 1) an external circuit connected to the driving circuit, wherein the inkjet head is provided with data storage means for storing driving information data at least including driving condition data of the inkjet

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head, and the external circuit is provided with setting means for reading at least the driving condition data included in the driving information data and automatically setting driving conditions of the inkjet head

- (claim 2) driving condition data includes voltage rank data or setting a magnitude of the driving voltage

Meanwhile, Kishi teaches a printer that includes a system for automatically adjusting the drive voltage of a printhead according to a predetermined rank characteristic of the head (Abstract). Specifically, figure 6 teaches a circuit connected to driver IC 26; figures 10A and 10B are tables for determining rank based on drive voltage necessary to perform operations of printhead 2 and a table showing drive voltage required to drive each rank of the printhead in a particular operating ambient temperature, respectively. Column 9, lines 45-50 teach CPU 43 acts as a setting means for "after distinguishing the rank of the mounted printhead 2, it can appropriately control voltage applied to the printhead 2 during printing operations..."

Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to incorporate the teaching of a circuit which includes rank data including driving condition data and setting means to read rank data and to set driving conditions of the head taught by Kishi for the purpose of performing appropriate printing operations (column 9, line 50).

Claims 3-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over AAPA in view of Kishi as applied to claim 1 above, and further in view of Ardito et al. (6,431,672).

AAPA in view of Kishi teaches all claimed features of the invention except:

Claim 3:

- the driving information data includes dot count data obtained by counting the number of ink discharge of the inkjet head

Claim 4:

- data writing means for storing the number of times of ink discharge of the inkjet head as the dot count data in the data storage means

Claim 5:

- data manage means for managing the dot count data
- notifying means for notifying the ink is close to the end of its lifetime, wherein the data managing means makes the notifying means operate at a time point when the dot count data attains a predetermined value or more

Meanwhile, Ardito et al. teach an inkjet printer that's capable of counting ink drops that are fired by printhead 102 (col 7, lines 65-67). Then, the system then

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calculates the estimated amount of ink used from that drop count and knowledge of the amount of ink per drop (column 8, lines 1-4). This estimate of ink used is then subtracted from the starting estimate of ink remaining in the container 110, and the resulting value is stored (column 8, lines 2-6), hence inherently teaching data manage means and data writing means. Ardito also teaches a notification means to notifying a user of a low ink condition within the ink container (column 5, lines 25-30).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the invention of AAPA in view of Kishi to incorporate the teaching of Ardito's dot counting means, data writing means, and notification means for the purpose of reliably and accurately determining the ink level within the ink reservoir (column 4, lines 4-6).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lamson D. Nguyen whose telephone number is 571-272-2259. The examiner can normally be reached on 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Talbott can be reached on 571-272-1934. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



LAMSON NGUYEN
PRIMARY EXAMINER

05/04/11